APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/439,061	11/12/1999	ROBERT J. PROEBSTING	939A-350-1-2	1190

20350   7590   12/18/2002

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EXAMINER
YENKE, BRIAN P

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/439,061	PROEBSTING, ROBERT J.
	Examiner	**Art Unit**	
	BRIAN P. YENKE	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*Response (15 October 2002)*</u> .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>20-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>20-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____ .

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> .	6) ☐ Other: .

DETAILED ACTION

1.   Applicant's arguments with respect to claims 20-25 have been considered but are

moot in view of the new ground(s) of rejection.

Information Disclosure Statement

2.   The IDS submitted by the applicant (Lazar et al.,) has been received and

considered by the examiner. However, there is no date listed on the reference

provided, and thus the examiner requests the applicant to provide a date.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over

May, US 5,815,168 in view of Lazar et al. "An Embedded Frame Buffer for Graphics

Applications".

In considering claims 20-23,

1) the claimed segmenting a plurality of pixels...is met controller 510 which is coupled to

host CPU 540, and transfers data to display memory 550 via memory controller 520,

where the pixels may be ordered within a row of memory in a scan-line format (left to

right, top to bottom) or in another format are stored in a tiled address format

2) the claimed storing data representing each of said plurality of pixel groups is met by

display memory 550 which stores the tiled pixels.

However, May remains silent on the storing data in non-adjoining arrays.

May discloses a DRAM/RDRAM "Tiled Memory Addressing With Programmable Tile

Dimensions" where the tile shape and dimensions are optimized for sizes and shapes of

blocks of pixel data to be transferred to the display memory (col 4, line 53-56).   The tile

dimensions which include tile size and tile height are programmable parameters stored

in software (col 6, line 20-30).   The parameters may also be determined by software

depending upon video mode, resolution, and pixel depth.   As defined by May, tile

size(aspect ratio) is the number of pixels in a tile which is the same as the number of

pixels which may fit into one row of the DRAM array.   Also, May discloses that

subsequent accesses to data words in different columns of the same row (column

accesses) are much faster than accesses to different rows. May discloses depending

upon the graphics or video image to be displayed a sequential scan-line based

addressing scheme may create a bottleneck when data is input into the memory (col 2,

line 28-41).

The examiner incorporates "An Embedded Frame Buffer For Graphics

Applications" by Lazar et al, which uses a memory (1.5 Mbytes) and associated

registers as a frame buffer. Lazar discloses that memory arrays comprising the frame buffer operate almost as independent memories connected via a common data bus. Lazar also discloses that since neighboring arrays share a set of sense amplifiers (Fig 3), two neighboring arrays are not simultaneously permitted to have open arrays. Thus, up to half the arrays may have open rows at any given time. Therefore, the write bandwidth may be effectively doubled by writing the same data to two locations.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify May, which discloses a system which optimizes tile shape and dimensions for pixel data to be in stored in memory based upon the video mode (may comprise odd and even lines), resolution and pixel depth, with Lazar by storing data in non-adjoining (non-neighboring) arrays, the arrays being either an odd or even array, since two neighboring arrays cannot simultaneously have open arrays as taught by Lazar, which would then effectively double the write bandwidth thus providing faster access time and prevent bottlenecking from occurring.

In considering claims 24-25,

May does not specifically disclose, dividing the display panel into a first half and a second half. May discloses a system where a depending upon the application type, a particular tile size (i.e. aspect ratio) may provide optimal performance depending upon the type of data being transferred. Where transfers of text data may perform optimally with long, narrow tiles for text and graphical images and video on the other hand may be optimized using taller more rectangular or square tile shapes.

Therefore it would have been obvious to one of ordinary skill in the art at the time

of the invention to modify May which discloses a system which divides the pixel data

into an appropriate tile shape/size based upon the type of video mode, resolution, pixel

depth of the signal, by dividing the display into respective portions based on the users

needs and the type of signal to be displayed.

For Motivation/Comments regarding arrays, refer to claim 20 rejection above.

Conclusion

4.   Applicant's submission of an information disclosure statement under 37 CFR

1.97(c) with the fee set forth in 37 CFR 1.17(p) on 15 October 2002 prompted the new

ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS**

MADE FINAL. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of

time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305-4700.

B.P.Y.

03 December 2002
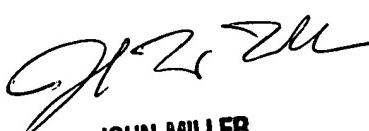
JOHN MILLER
SUPERVISORY PATENT EXAMINER
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